

A Model Stormwater Utility for the State of Maine



Prepared for:

**Maine State Planning Office
Maine Coastal Program
38 State House Station
Augusta, ME 04333**

Prepared by:

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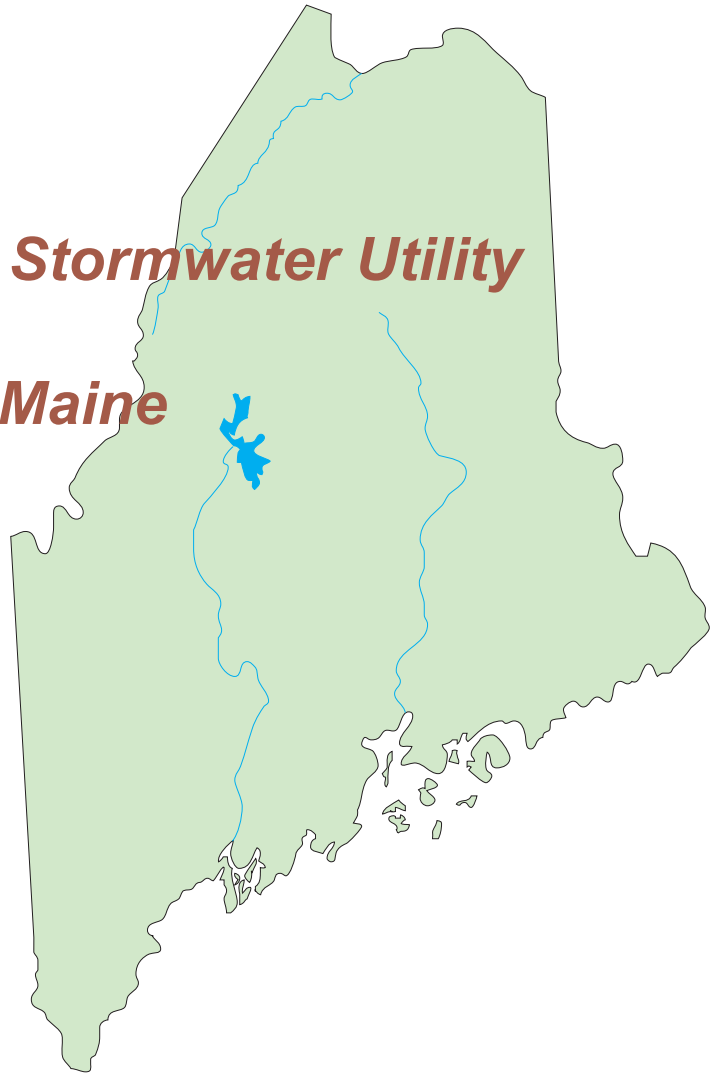
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for the
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Narrative Description of Issues and Options

This document presents a model for creating a stormwater utility for Maine communities, provides some of the background and reasoning for why utilities are often implemented to meet stormwater management objectives, and presents a model ordinance as a starting point for creating a utility at the local level.

Background

Stormwater utilities are an increasingly popular means of funding programs to manage stormwater runoff at a local level. They are widely used in the mid-Atlantic and Southern states, the Midwest and the West coast. Nationally, utilities began to be formed in the 1980's, with the largest growth coinciding with the initiation of the U.S. Environmental Protection Agency (US EPA) National Pollutant Discharge Elimination System (NPDES) program.

In many parts of the country, stormwater management programs have been established to manage and control stormwater runoff from both existing and new development to reduce pollutant loading to receiving waters, minimize accelerated channel erosion, augment groundwater recharge and/or reduce flooding threats. Successful programs usually involve a comprehensive approach that can include elements such as developing and implementing ordinances, hiring and maintaining staff, purchasing and maintaining specialized equipment, and/or coordinating a public education campaign. All of these program aspects cost money, which is often in short supply at the municipal level. Traditional sources of funding stormwater management programs include permit fees from new development, fines from violations, local taxes, impact fees, and/or a combination of all of these. Increasingly, communities have found that the traditional stormwater funding approach is falling short in meeting the needs of both mandated and optional program elements. There is growing interest in finding and using a stable funding source that can support desired program elements.

The creation of a stormwater utility allows a community to fund a purposeful program to mitigate the effects of stormwater runoff on precious water resources. In the absence of such an entity, stormwater management is often done under the broad umbrella of public works, and typically just enough time and resources are committed to manage problems. Under a utility, comprehensive planning can be done to identify the sources of stormwater pollutants, evaluate the impacts on resources, and choose the best way to manage stormwater.

As development of urban and rural parts of Maine increases, stormwater utilities may be a useful mechanism to ensure adequate funding is available for the protection of important public resources like drinking water supplies, rivers, lakes, stream, ponds, wetlands, and estuaries. While the population density in the State of Maine is among the lowest in the country (38 residents per square mile), both urbanized and rapidly urbanizing areas will need effective stormwater management programs to meet regulatory obligations, such as the Phase II stormwater permit program, implementation of total maximum daily load (TMDL) requirements, as well as to maintain or enhance receiving water resource quality for recreational uses, economic vitality, and protection of natural systems.

Establishment of a utility can be advantageous to all sizes of towns or districts, those with existing infrastructure and those without. In localities where no local funds are currently available to address water quality, drainage, or flooding problems, a utility can create the means for effective stormwater management. Areas of Maine most likely to benefit from creation of a utility are those that have aging or inadequate systems, have no stormwater management system for existing developed areas, are located near sensitive water resources, experience flooding problems, and/or are experiencing significant growth pressures. A utility can be an effective means to secure funding and establish programs to approach watershed management objectives delineated in local comprehensive plans.

Utilities can be established to address an array of issues, from broad watershed planning and management to more focused concerns such as flood control. With regard to flood control in particular, many communities in the country have benefited from establishment of a stormwater utility in order to resolve lines of responsibility. Historically, in other parts of the country, responsibilities for flood control and management have been unclear, with disagreements common between local planning agencies and public works departments concerning responsibility for responding to a flood emergency and oversight of long-term flood management.

While Maine Chapter 500 sets forth stormwater management requirements on a statewide basis, towns can adopt a local stormwater management ordinance. This action may be taken with or without a utility in place, and certainly is not a prerequisite for establishing a utility. In addition, developing and establishing watershed management plans should not be considered a prerequisite for establishing a utility, but watershed management plans can assist in identifying the activities and responsibilities of a utility. So where feasible and practical, the watershed planning process would ideally precede the establishment of a utility.

A utility can be established under existing state laws (see Authority on page 8) by a municipality, county or regional planning entity. An array of management structures can be considered (see Management Structure Alternatives on page 14)

NOTE: References for existing stormwater utility structures are included at the end of this section, and may be used in whole or in part as a model for Maine communities and/or regions.

Stormwater Utility Model Ordinance

NOTE: At certain points in this document language appears that requires a decision by the drafter of the ordinance. The options are denoted and identified in <<italics>>. Please note that the model ordinance is written from the standpoint of a city or town. Where the management entity is other than a city or town, for example, an existing utility or a watershed district, appropriate language can be substituted.

There are also points in the model ordinance where guidance language appears, which is denoted in boxed italics; this guidance is not part of the model ordinance language.

The Model Ordinance language follows on the odd numbered pages and accompanying guidance follows on the even numbered pages.

Planning the Utility

Both urbanized and rural areas of Maine should be considered in planning for the management of stormwater. In urban areas where natural hydrology is dramatically altered, there is an irregular and inconsistent pattern of stormwater collection, treatment and discharge, resulting in differing demands on stormwater management and drainage systems, municipal programs, and requiring integrated approaches to management. In rural areas, where the hydrologic balance is generally intact, new development and land alteration can still have a significant impact on water resource quality. As smaller development projects occur and greater amounts of impervious surface are created, the stormwater burden is increased, and water quality changes occur. Even slight declines in surface water quality or increases in water temperature attributable to stormwater runoff can have dramatic effects on sensitive aquatic species. Maine is also somewhat unique because the interface between rural drainage (i.e., open roadside swales), and urban areas can occur over relatively short distances and many communities have very rural areas as well as very compact downtown urban areas. Cooperation between rural and urban areas of a district or watershed, and/or interlocal cooperation among communities sharing common water resources, is therefore essential for efficient delivery of services to maximize protection of water resources.

Interlocal cooperation can occur through formal or informal arrangements. Memoranda of understanding are an effective way of spelling out objectives and allocating responsibilities and resources, and are recommended.

Recognizing that stormwater management needs are greater in urbanized areas but are still vital to all areas of a district, watershed, community or region, the service area coverage should include the entire geographic area of a watershed. The difference in demands on services, as measured by gross areas of individual properties and intensity of development on those properties, can be accommodated by a utility through a comprehensive assessment of the impacts to resources associated with alternative land uses.

Prior to establishing a stormwater utility, a clear program must be planned that addresses all aspects of the operation of the utility and builds a compelling case for its creation. The utility must address identified stormwater management needs, and be funded sufficiently according to those needs. It is highly advisable for the entity working to establish a utility to secure local, regional or state funding to conduct a needs assessment and determine the most appropriate management structure option for the area to be served by the utility.

A needs analysis is a highly recommended option to ensure legal validity of the proposed ordinance, but such a study is not absolutely necessary to establish a stormwater management utility.

Laying the groundwork for public support of a stormwater utility is essential prior to actually establishing the organization. Support can be garnered through a well-designed public education and outreach campaign. Components of such a program could include public presentations and hearings, mailing of informational brochures to property owners in the proposed service area, media coverage and special columns or editorials, Web sites, workshops, collaboration with area environmental and other supportive non-governmental organizations (NGOs) to inform their memberships, and engagement of community leaders in the cause.

Stormwater Utility Model Ordinance

1. Findings

Whereas the <<City/ Town>> of _____ finds that water quality in the watershed of the <<water body>> is potentially threatened by pollutants associated with existing land use and future development; and

Whereas the <<City/ Town>> of _____ finds that poor water quality in the watershed can threaten public health, safety, and welfare; and

Whereas a need for interlocal cooperation exists with regard to management of stormwater on a regional basis; and

If the utility is for a single city/town, drafter of utility can typically delete the above finding.

Whereas the existing stormwater management system is deteriorating and inadequate to meet existing and future needs, and flooding concerns are evident; and

Whereas requirements of the US EPA demand a comprehensive approach to municipal stormwater management, and the <<City/ Town>> of _____ wishes to take a proactive approach to these requirements; and

Whereas a professional engineering and financial analysis of the stormwater management needs for the <<City/ Town>> of _____ has been performed and has concluded that substantial stormwater management needs exist;

The <<City/ Town>> of _____ makes the following findings:

- The stormwater management needs of the <<City/ Town>> of _____ have been identified in a needs analysis entitled <<name of study>> that indicates more effective stormwater management in the <<City/ Town>> of _____ would contribute to the health, safety and welfare of the residents. Further, this analysis reveals that stormwater facilities and activities associated with stormwater management provide services and benefits to all properties, property owners, residents and citizens of the <<City/ Town>> of _____.
- Given the scope of stormwater management needs identified by <<name of study or agency performing study>>, it is appropriate and necessary to authorize the formation of a stormwater utility, comprised of both organizational and accounting components, and charged with the responsibility to establish, operate, maintain, control, and enhance the stormwater management systems of the <<City/ Town>> of _____, cooperatively with other water resource management programs within the jurisdiction.
- In order to establish, operate, and maintain the stormwater infrastructure of the <<City/ Town>> of _____, ensure the future usefulness of the existing system through additions and improvements, and provide other services associated with stormwater and watershed management, sufficient and stable funding is required for the utility for system operation and capital investments.

Purposes of the Utility

The purpose of the utility can be presented in a variety of ways, for example, through a series of “whereas” statements, and/or through a section entitled “Findings of Fact.” In either case, there should be a section that explains WHY the utility is being established. For example, a utility can help a town or other jurisdiction pursue goals such as reduction in non-point source pollution, reduction in flooding, improvements in water quality, reduction of erosion and sedimentation, improvement of wildlife habitat, and compliance with regulatory programs such as Maine’s stormwater regulations or federal total maximum daily load (TMDL) requirements, as well as other programs and policies at the federal and state level .

Several statements of purpose are provided in the model. Each entity creating a utility can select or modify these items or add additional language according to individual community needs.

Relationship of a Utility to Other Municipal Planning and Development Activities

A stormwater utility can be a mechanism for helping to implement the recommended or required actions of a stormwater ordinance, watershed master plan or local comprehensive plan, and should be planned and structured within the context of such a plan.

There is no specific requirement to have a local stormwater management ordinance in place prior to implementing a utility because state and federal programs now mandate the implementation of stormwater management measures. Therefore, funding for review, maintenance and operation of these measures will always be needed. That being said, if a community is considering a local ordinance, it makes a great deal of sense to implement this prior to the implementation of a utility because the functions, obligations and budget of a utility are likely to be dramatically effected by the provisions and requirements set forth in a local ordinance.

Several communities in Maine, including China, Winthrop, Poland, Auburn, Falmouth, and Lewiston, have local stormwater management ordinances in place. Some of these are stricter than the state law, and consequently the funding needs for these programs may be greater than areas without such an ordinance in place.

For NPDES Phase II communities, stormwater management plans must be prepared and implemented over the five years starting after June 3, 2003 (See list of Maine NPDES Phase II communities in Appendix 2.). Community comprehensive plans could be updated to add a stormwater planning and management component that could be supported by way of a utility.

Another important consideration for communities is to understand how a stormwater utility fits into other community funding programs. As stated previously, many communities fund stormwater management programs with permit fees and impact fees. Impact fees are essentially a set of charges applied against new development to offset the costs of new services associated with that development. As new development creates or increases demands on community infrastructure, development impact fees are becoming increasingly popular as a way to fund structures and services required as a result of growth. Impact fees can certainly be used to fund stormwater management program elements, but this funding must generally be limited to services related to new development, such as permit processing, plan review, and construction inspections.

- A stormwater utility fee schedule based on gross land area and intensity of land use is the most appropriate and equitable method of allocating the cost of stormwater management activities of the utility between rural and urbanized areas of the <<City/ Town>> of _____ and formation of interlocal agreements is the most suitable vehicle for governing assessments and collections of the utility.
- While differences in the level of need exist throughout the proposed service area for the utility, stormwater management is necessary throughout the <<City/ Town>> of _____ and does rationally encompass all lands and waterways within the jurisdiction.

2. Purpose

Stormwater runoff is one of the largest contributors to water quality violations in urban and urbanizing areas of Maine (See Maine 303(d) list and TMDL information at <http://www.state.me.us/dep/blwq/docmonitoring/impairedwaters/>). According to the US EPA, polluted storm water runoff is a leading cause of impairment to the nearly 40% of surveyed U.S. water bodies which do not meet water quality standards (US EPA, 1995). When polluted stormwater runoff is discharged directly into surface water bodies, several adverse effects can occur: public health can be threatened from contaminated drinking water sources, food sources, and recreational waters; aquatic habitats can be damaged or destroyed; and aesthetic values of waterways can decline.

Management of stormwater is critical to ensuring the integrity of valuable surface water resources. An effective approach to managing stormwater and related impacts is creation of a utility that delivers stormwater management services to a community or group of communities.

Therefore, the <<City/ Town>> of _____ hereby establishes a stormwater management utility for the following purposes:

- To determine the necessary level of municipal stormwater management services for the <<City/ Town>> of _____;
- To maintain and improve the drainage facilities of the <<City/ Town>> of _____, to ensure that they perform to design capacity while using best management practices to meet local, state, and federal water quality standards;
- To mitigate the damaging effects of uncontrolled and unmanaged stormwater runoff;
- To recommend funding levels for provision of the necessary services;
- To authorize the establishment and implementation of a master plan for storm drainage, and advise the staff of the stormwater management utility on master planning efforts and the cost of service/rate studies;
- To support and promote sound stormwater management practices that mitigate non-point source pollution, reduce flooding, and enhance area drainage within the <<City/ Town>> of _____; and
- To support the goals and objectives of the <<City/ Town>> of _____ stormwater management ordinance.

Drafter of utility ordinance must evaluate whether an existing ordinance is in place in the community, and provide an appropriate citation. If a local ordinance does not exist, some reference must be made to the applicable state regulations (i.e., Chapter 500 Stormwater Management Law).

Funding from a stormwater utility is much less limited where funds can be used to address stormwater management needs of existing development, as well. The developer of new development projects pays impact fees, whereas stormwater utilities are funded by all properties in a management district. In cases where that development will clearly add to the stormwater management requirements of a community or region, impact fees assessed upon new development can be added to stormwater utility fees. A variety of community planning aspects, including establishment of a stormwater utility, can be interwoven to form highly effective funding mechanisms to meet watershed protection objectives.

Links to Other Laws and Programs

An important aspect in establishing a stormwater utility is to link the program to other existing or planned government agencies, municipal activities, and local, regional and state ordinances and laws. Some of the linkages that should be considered for a utility are the following:

- Local/regional stormwater ordinance;
- Floodplain ordinance;
- Stormwater master plan/community comprehensive plan (e.g., link stormwater and planning by including a planning component in the 5-year updates suggested for local comprehensive plans);
- Development regulations and permitting (e.g., applicants receive copies of stormwater program quantity and quality criteria and are required to sign affidavits pledging to comply with stormwater performance standards for private property);
- Sewer and water service;
- Environmental education programs; and
- Homeowner notification at time of sale.

Authority

The broadest legal basis for establishing utilities in Maine is provided by municipal “home rule” authority. This authority allows municipalities to exercise any power or function that the legislature has the power to confer upon it, so long as that power is not denied expressly or by clear implication in state law. Municipal power to exercise authority is therefore broad. It is limited only when the state law expressly or implicitly prohibits local action in a particular area (such as solid waste disposal). In most cases, recent state laws contain a provision expressly reserving authority to the municipalities, thereby removing any question of whether the legislature intended to prohibit municipal ordinances in the particular area. For example, 38 M.R.S.A. § 401, Ground Water Protection Program, states “This article is not intended to limit a municipality’s power to enact ordinances under Title 30-A, section 3001, to protect and conserve the quality and quantity of ground water.”

Municipalities in Maine enjoy general authority to regulate stormwater through zoning ordinances adopted pursuant to 30-A M.R.S.A. § 3001 and 4352. Ordinances adopted under the authority of Title 30-A enjoy liberal construction and a presumption that the ordinance is a valid exercise of a municipality’s home rule authority. Thus, a municipal ordinance will be upheld as long as the ordinance was adopted by correct, statutory procedures and does not frustrate the purpose of any state law.

3. General Provisions

The Code of Ordinances of the <<City/ Town>> of _____, Chapter ____ is hereby amended by adopting a new article, Article ____, Stormwater Management, relating to stormwater management in the <<City/ Town>> of _____, and stating findings regarding stormwater management needs in the <<City/ Town>> of _____; establishing a stormwater utility as a dedicated enterprise accounting unit of the <<City/ Town>> of _____; stating the service area, purposes and powers of the utility; providing definitions; stating general service charge rate policies; providing for severance of sections of the ordinance; establishing an effective date; repealing conflicting ordinances; and other purposes as set forth herein.

4. Authority and Jurisdiction

Under the authority of the Maine Constitution, Article VIII, <<*and other statutes selected by drafter - see accompanying narrative*>>, the <<City/ Town>> of _____ hereby authorizes the establishment of a public utility to provide stormwater management services within the municipality. This utility is authorized to collect service fees from all persons owning land within the municipality that benefit from the services provided by the utility, including all persons that own land from which stormwater runoff discharges directly or indirectly to the stormwater system managed by the public utility.

The stormwater management utility will assume all responsibility from the municipality for: providing stormwater management services; maintaining stormwater infrastructure; providing engineering services for stormwater management; regulating, in accordance with local, state and federal regulations, stormwater discharges from each parcel contributing to the stormwater system; and collecting utility fees. The <<*Board of Commissioners of the utility, or other body named by the town or city council*>> is permitted to issue approvals/denials for stormwater management plans for new and/or existing development if such activity is expressly authorized by the <<*Planning Board/Board of Appeals/Building Commissioner, or other approving authority*>>.

The boundaries and jurisdiction of the stormwater utility shall encompass all portions of the <<City/ Town>> of _____.

In the case where the district extends across community boundary lines, for example in the case of a service area based on a watershed, this paragraph would need to be adapted appropriately by substituting “district” or “watershed” for “City/ Town” in the first option blank and adding wording at the end of the sentence, such as: “including but not limited to all the incorporated areas of the <<City/ Town>> of and subject to interlocal agreements for stormwater management as approved by the participating <<Town/City>> of <<provide names of communities participating in interlocal agreement>>.”

In addition, municipalities may enter into interlocal agreements to carry out valid municipal purposes such as stormwater management. 30-A M.R.S.A. § 2201 states:

“It is the purpose of this chapter to permit municipalities to make the most efficient use of their powers by enabling them to cooperate with other municipalities on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population and other factors influencing the needs and development of local communities.”

Through this authority, municipalities may establish agreements between and among municipalities to apply protective stormwater management standards to protect and preserve natural resources.

Municipalities may participate in a Watershed Management District, authorized by 38 M.R.S.A. Chapter 23, “Coastal and Lake Watershed Districts.” Title 38 M.R.S.A. § 2001 states:

“Watershed districts may be created pursuant to this section to protect, restore and maintain the natural functions and values of coastal wetlands; freshwater wetlands; rivers, streams and great ponds; coastal harbors; bays; estuaries and marine waters and to manage and conserve the land and water resources of watersheds of those resources within the jurisdictions of these districts. The natural functions and values of those resources include water quality, water quality maintenance, aquatic and wildlife habitat, scenic quality and floodwater storage and conveyance. The term “participating water district,” as used in this chapter, means a water district, as defined by Title 35-A, section 6101, subsection 3, included in the application provided for by section 2002.”

Watershed Management Districts created under Chapter 23 have the authority to charge assessments (see Section 2010).

Other sources of authority for creation of a stormwater utility are:

- Title 12 - Chapter 1, Section 151, Soil and Water Conservation Districts. These districts can be formed by a special ballot referendum at a regular election. They are then eligible for state funding earmarked to encourage innovative local soil and water conservation projects;
- Title 35 - A: Public Utilities. Allows for the creation of public utilities, but stormwater utilities are not expressly mentioned;
- Special legislation for a specific township or district, such as that adopted for the Saco River Watershed and the Aroostook County Water and Soil Management Board; and
- Regional Planning Commissions.

A stormwater utility ordinance enacted by a municipality should be described as amending the existing code of municipal ordinances.

Definitions

Developed Land: While the definition of developed land can be construed to include farmland, agricultural uses and timber cropping, the model ordinance excludes this element.

5. Definitions

The definitions contained in Maine Chapter 500, the Maine Stormwater Management Law (Title 38 Section 420D), <<and the local stormwater ordinance, if applicable>> are incorporated herein by reference. Additional terms used in this ordinance are defined as follows:

Credits: Credit shall mean a conditional reduction in the amount of a stormwater service fee to an individual property based on the provision and continuing presence of an effectively maintained and operational on-site stormwater system or facility or other service or activity that reduces the stormwater management utility's cost of providing services.

Customers of the Stormwater Utility: Customers of the stormwater utility shall include all persons, properties, and entities served by and/or benefiting from the utility's acquisition, management, maintenance, extension, and improvement of the public stormwater management systems and facilities and regulation of public and private stormwater systems, facilities, and activities related thereto, and persons, properties, and entities which will ultimately be served or benefited as a result of the stormwater management program.

Developed Land: Developed land shall mean property altered from its natural state by removal of vegetation, construction, or installation of improvements such as buildings, structures, or other impervious surfaces, or by other alteration of the property that results in a meaningful change in the hydrology of the property during and following rainfall events (agricultural and forestry operations exempted).

Development Intensity Factor (DIF): A development intensity factor shall numerically represent the hydrologic response consistent with generally accepted engineering values in a manner that allows a fair and reasonable structure of service fee rates for all properties. The development intensity factor of a property may be determined by a composite calculation that considers portions of the property to have differing development intensities.

Ephemeral Stream: a channel that flows only during wet weather following a precipitation event and typically flows no more than a few days after the storm.

Equivalent Residential Unit (ERU): A measure used to standardize the utility service fees for residential properties, or classes of residential properties, and based on the average size of a residential parcel and an average amount of impervious area. For the purposes of this Chapter, one ERU shall mean _____ square feet.

Drafter of utility ordinance to fill in blanks, using guidance provided in accompanying narrative.

Equivalent Residential Gross Area (ERGA) Unit: The equivalent residential gross area unit is determined based on a sample of _____ detached single-family residential dwelling unit properties drawn from throughout _____, including incorporated cities and towns. For the purposes of this chapter, an equivalent residential gross area unit shall mean _____ square feet of total property area. The ERGA unit shall be used as the basis for determining the equivalent size of non-residential properties, for the purpose of calculating appropriate stormwater service fees for those properties.

Drafter of utility ordinance to fill in blanks, using guidance provided in accompanying narrative.

Equivalent Residential Unit (ERU): The square footage of one ERU, which is the basic measuring unit for assessing utility fees, and calculates an average size of a residential unit and non-rooftop impervious cover to obtain an average impervious cover, can range from 1,000 square feet, to over 10,000 square feet, depending on the characteristics of the subject community. There is no recommended value for the ERU in the model ordinance, as the appropriate number must be developed from community-specific data.

Communities will need to do an assessment of building size and accompanying impervious cover characteristics within either all, or a sample portion of the community. The assessment is similar to a typical tax assessor's appraisal evaluation. Many communities will already have this data available through their tax assessor's office. The calculation is as follows: The square footage of all houses plus the on-lot non-rooftop imperviousness is summed and divided by the total number of lots in a community (or sample number of lots of a community) to get an average impervious footprint for the average lot.

Equivalent Residential Gross Area (ERGA): The ERGA is used to determine rates for non-residential properties and is a means of standardizing the utility assessment for all properties, both residential and non-residential properties. The ERGA is best determined by selecting several blocks of representative residential parcels, perhaps 5 to 10 blocks of five properties each, from an assessor's map of the community or communities to be served by the utility, and calculating the percentage of impervious coverage and lot size for each individual property, then averaging that number across all the properties in the survey to yield one representative number for impervious surface and average lot size associated with residential units. The resulting ERGA can then be used to estimate how many how many residential equivalents would be on a given commercial, industrial or institutional property.

The methodology requires communities to derive a value for ERGA based on a sampling of residential parcel data. Then the community can use this data to estimate the residential equivalent areas of non-residential properties. For example, assume the calculated ERGA for community is 15,000 square feet. A five-acre commercial shopping center that is 75% impervious would equate to, in round numbers, 11 ERGA.
 $[(5\text{-acres}) \times (0.75) \times (43,569 \text{ sq.ft./ac})] / 15,000 \text{ sq. ft.} = 10.89 \text{ ERGA units.}$



Exemption: Exemption shall mean not applying to or removing the application of the stormwater management utility service fee from a property. No permanent exemption shall be granted based on taxable or non-taxable status or economic status of the property owner.

Hydrologic Response: The hydrologic response of a property is the manner whereby stormwater collects, remains, infiltrates, and is conveyed from a property.

Impervious Surfaces: Impervious surfaces are those areas that prevent or impede the infiltration of stormwater into the soil as it entered in natural conditions prior to development. Impervious areas include, but are not limited to, rooftops, sidewalks, walkways, patio areas, driveways, parking lots, storage areas, compacted gravel surfaces, awnings and other fabric or plastic coverings, and other surfaces that prevent or impede the natural infiltration of stormwater runoff which existed prior to development.

Intermittent Stream: a stream or river that flows during both wet and dry weather only during the wettest part of the year and exhibits no flow during dry weather during at least a portion of the year, and is depicted as a thin solid line on United States Geological Survey (USGS) quadrangle maps.

Other Developed Lands: Other developed lands shall mean, but not be limited to, mobile home parks, commercial and office buildings, public buildings and structures, industrial and manufacturing buildings, storage buildings and storage areas covered with impervious surfaces, parking lots, parks, recreation properties, public and private schools and universities, research facilities and stations, hospitals and convalescent centers, airports, agricultural uses covered by impervious surfaces, water and wastewater treatment plants, and lands in other uses which alter the hydrology of the property from that which would exist in a natural state.

Perennial Stream: a stream or river that flows during both wet and dry weather throughout the year and over multiple years in duration, and that is depicted as a bold line on USGS quadrangle maps

Pollution: The contamination or other alteration of the physical, chemical or biological properties of any natural waters of the <<City/ Town>>, or the discharge of any liquid, gaseous, solid or radioactive or other substance into any such waters as will or is likely to create a nuisance, or render such water harmful, detrimental, or injurious to the public health, safety and welfare or to other beneficial uses.

Residential Dwelling Unit: Residential dwelling unit shall mean developed land containing one or more structures and which contains one or more bedrooms, with a bathroom and kitchen facilities, designed for occupancy for dwelling purposes. Dwelling units may include single-family houses, single duplex units under common ownership, manufactured homes, condominiums, townhouses, and mobile homes located on one or more individual lots or parcels of land. Developed land may be classified as a residential dwelling unit despite the presence of incidental structures associated with residential uses such as barns, garages, carports, or small storage buildings such as tool sheds or woodsheds.

Stormwater: Precipitation as it falls to the earth, surface runoff and drainage, and paths taken by such water.

Management Structure Alternatives

Several alternatives exist for the management structure of a utility. The two simplest approaches, and the ones recommended for consideration, are either an existing district or an incorporated city or town, since the structure for operating the utility would be largely in place. Four options for management districts are:

1) Existing District

An existing sewer, water, or watershed district can be used as the base structure for establishment of a stormwater utility. The stormwater utility can be created as a division within the existing district, with its own articles of organization and a distinct account for collection and disbursement of funds collected by the utility. The benefits of this approach are the relative ease of implementation and a pre-existing framework for administration and management of the utility. The drawbacks include the possibility that the existing district service area does not match the desirable stormwater utility district, and that any weaknesses in operation of the existing district may be built in to the new stormwater utility district.

2) Incorporated Town or City

Many municipalities across the country have established their stormwater utility as a separate department within the city or town, often sharing the same Director of Public Works. In this scenario, the scope and funding for a utility is isolated and clearly defined, but its activities can be closely coordinated with peer departments within the municipality such as the Department of Public Works (DPW) itself, the Planning Department, the Engineering Department, and/or the Highway Department, all of which are likely to participate in aspects of stormwater planning and management. In a national survey conducted by the Florida Stormwater Association, the majority of the 124 stormwater utilities that participated in the survey are organized as a separate utility or as a component of the municipal Department of Public Works. The benefits of this alternative include strong opportunities for coordination with other municipal services and efficient handling of revenues and expenses. The drawbacks are that the utility is less autonomous than an independent agency and may have limited flexibility in planning stormwater programs or responding to stormwater management needs.

3) Regional Planning Commission

A stormwater utility can potentially be established as a component of a Regional Planning Commission (RPC), as authorized by the authority under Chapter 30-A, Section 115. In this scenario, the utility would function as a division within the Commission, with its own articles of organization and a separate account for collection and disbursement of funds dedicated to operation of the utility. Utility fees could be included as part of the annual payments municipalities make to the RPC to participate in RPC programs and receive RPC services. Since it is important for municipalities to work cooperatively with a regional entity on matters that affect the operation and efficacy of the utility, interlocal agreements between participating municipalities and the RPC are a critical component for successful operation of a utility on a regional basis. The benefits of creating a stormwater utility within an RPC include more coordinated and consistent approaches to stormwater management within a watershed and reduction in the number of independent utilities, providing

Stormwater Management Programs, Services, Systems, and Facilities: Stormwater management programs, services, systems, and facilities are those administrative, engineering, operational, regulatory, and capital improvement activities and functions performed in the course of managing the stormwater systems of the <<City/ Town>>, plus all other activities and functions necessary to support the provision of such programs and services.

Stormwater Management Systems and Facilities: Those natural and man-made channels, swales, ditches, swamps, rivers, streams, creeks, branches, reservoirs, ponds, drainage ways, inlets, catch basins, pipes, head walls, storm sewers, lakes, and other physical works, properties, and other improvements which transfer, control, convey or otherwise influence the movement of stormwater runoff and its discharge to and impact upon receiving waters.

Stormwater Service Fees: Stormwater service fees shall mean the periodic service fee imposed pursuant to this article for the purpose of funding costs related to stormwater programs, services, systems, and facilities.

Undeveloped Land: Land in its unaltered natural state or which has been modified to such minimal degree as to have a hydrologic response comparable to land in an unaltered natural state shall be deemed undeveloped. Undeveloped land shall have no pavement, asphalt, or compacted dirt or gravel surfaces or structures which create an impervious surface that would prevent infiltration of stormwater or cause stormwater to collect, concentrate, or flow in a manner materially different than that which would occur naturally.

6. Establishment of a Utility and Enterprise Fund

- a) There is hereby established a stormwater utility as a division of the <<City/ Town>> of _____, which will be charged with the responsibility for managing stormwater throughout the <<City/ Town>> and which shall provide for the management, protection, control, regulation, use and enhancement of stormwater systems and facilities. The utility will be fully independent and financially self-sufficient. It will be a <<municipal>> organization that is funded wholly through service fees, loans, and state, federal and private grants, except that allocations of funds for specific purposes from the general fund or a special fund of the jurisdiction may be made to the dedicated stormwater fund.
- b) The Administrator of the <<City/ Town>> of _____ shall establish a dedicated stormwater enterprise fund in the <<City/ Town>> budget and an accounting system for the purpose of managing all funds collected for the purposes and responsibilities of the utility. All revenues and receipts of the stormwater utility shall be placed in the enterprise fund, which shall be separate from all other funds, and only expenses of the utility shall be paid by the fund. Fees will be set at a rate that covers the costs associated with stormwater management planning, utility staffing, engineering, maintenance and repair, public education, capital improvements, technical support, and other services approved by the municipalities that (together) authorize the function of this utility. Expenditure of funds may consider both stormwater quality and quantity management needs, and is limited to the following:

economies of scale. The drawbacks are potential lack of participation by some communities within the regional planning area, and possible inconsistencies in the revenue stream for the utility if communities opt out of the regional utility program.

4) Create a new 501(c)(3) organization

Establishment of a utility as a non-profit corporation is a fourth option to consider. In this scenario, a single entity (such as a public interest or environmental group) or an alliance of entities (a coalition of stakeholder groups, or a consortium of municipalities within a watershed) could join together as a new non-profit organization to form and operate a stormwater utility. Establishment of a revenue stream would depend on the structure and membership of the non-profit. The benefits to this approach include elimination of political boundaries as a limitation to the geographic scope of a utility; governance of the utility by an unpaid group of interested and presumably committed persons; and the ability to create public education campaigns outside the fiscal and ideological constraints sometimes imposed by government. The drawbacks are that a potential political instability to an autonomous group might develop, and the perception of a more removed level of control over stormwater management activity in a city or town. In addition, the 501(c)(3) would still need to be empowered through an action of local government to assume some functions of a utility; this option would simply place some of the stormwater utility functions under a specific kind of organizational structure (i.e., non-profit). Establishment of a utility as a non-profit entity is the weakest of all organizational structure options. A non-profit organization could not assess fees or levy fines or liens on its own. The entity would be restricted to non-regulatory activities like maintenance, monitoring, and public education and outreach. However, in the absence of any other entity, a non-profit approach could raise the level of awareness about the need for a structured municipal or quasi-municipal utility.

Under any management scenario, a utility must have staff to carry out its job. A need for dedicated staff can be anticipated even for the smallest utility, since qualified personnel are necessary for engineering review and design, operation and maintenance of the stormwater system, and administration. Utility staff may include one or more geographic information system (GIS) technicians and environmental engineers, in addition to at least one registered Professional Engineer (P.E.).



- Operating expenses;
- Non-operating expenses, such as equipment;
- Payment on principal and interest on debt obligations;
- Capital investments including stormwater best management practices (BMPs) and components (e.g., purchase of plants and other amenities to support stormwater management alternatives utilizing vegetation);
- Reserve expenses; and
- Others costs as deemed necessary by the <<City/ Town elective body>>.

The Administrator of the <<City/ Town>> of _____ may establish sub-units within the stormwater utility enterprise fund to account for the geographical generation of revenues and allocation of expenditures pursuant to interlocal agreements between the <<City/ Town>> of _____ and of the <<City/ Town>> of _____>>.

This provision can be modified depending on the selected management structure. When more than one community, or portion of a community, is included in the service area, consideration must be given to fair use and distribution of funds generated.

- c) The <<City/ Town>> of _____ hereby transfers the existing stormwater management systems and facilities owned and operated by the <<City/ Town>> to the utility, including but not limited to the properties upon which such facilities are located, easements, rights-of-entry and access, and identified equipment.

7. Requirements for On-site Stormwater Management

All property owners and developers of property within the <<City/ Town>> of _____ shall provide, manage, maintain and operate stormwater systems to meet Maine Chapter 500 Stormwater Management Law requirements <<and the performance standards of the local Stormwater Management Ordinance>> of the <<City/ Town>> of _____, and to be consistent with development regulations of the <<City/ Town>> of _____ and the State of Maine. Failure to comply with these requirements shall constitute a nuisance and be subject to abatement action by _____. In the event that a public nuisance is found by a court of appropriate jurisdiction to exist, which the property owner fails to abate within a reasonable time as allowed by the court, the <<City/ Town>> may enter upon the property and cause such work as is reasonably necessary to be performed, with the actual cost thereof assessed against the owner in the same manner as a tax levied against the property. From the date of filing such action, the <<City/ Town>> shall have lien rights that may be perfected, after judgment, by filing a notice of lien in the court of appropriate jurisdiction. The <<City/ Town>> shall have the right, pursuant to this ordinance, for its designated officer and employees to enter upon private and public property owned by entities other than the <<City/ Town>>, upon reasonable notice to the owner thereof, to inspect the property and conduct surveys and engineering tests thereon in order to ensure compliance.

The performance standards of the Stormwater Management Ordinance would only be mentioned if an ordinance exists that covers the utility service area.

Services provided

Formation of a utility can be an efficient vehicle for overall watershed planning and resource protection. In addition to developing and maintaining structural solutions to manage stormwater runoff, utilities can perform a number of other planning and management functions. A comprehensive list of services is provided in the model. Elements can be selected as appropriate for the specific utility.

One critical aspect of the services provided is an ongoing assessment of needs and priorities. The entity establishing the utility should look to the applicable master plan or comprehensive plan as a guide for future land use and development trends, and organize the activities of the utility to support long term plans, such as preservation or restoration of surface water and ground water resources, coordination of municipal services, encouragement of community economic development, and coordination of wastewater and stormwater management. The utility may be authorized to acquire land if it is kept as open space that can be used to manage stormwater while providing other benefits such as habitat and aesthetics. The utility should be encouraged to take a progressive approach to stormwater management, using and/or developing innovative best management practices such as rooftop gardens, pervious parking areas, and constructed stormwater wetlands.

Opportunities for Implementation of BMPs

As stated previously, the creation of a stormwater utility allows a community to fund a complete program to mitigate stormwater runoff effects. Utilities can undertake comprehensive planning and watershed assessment programs to look at the sources of impacts caused by stormwater runoff that are specific to the geographical location of the utility; how these impacts effect the specific natural resources of the watershed or region; and research, develop and implement the optimal methods of managing stormwater. Based on these management plans and studies, the utility may undertake a program of watershed retrofitting that includes designing and constructing urban best management practices (BMPs) that can address both quality and quantity aspects of stormwater management. Stormwater retrofits can be implemented to achieve a variety of watershed planning objectives, such as helping to meet regulatory obligations in compliance with total maximum daily load (TMDL) pollutant load reductions.



8. Services Provided

The drainage system of the <<City/ Town>> of _____ is comprised of all surface water bodies, including rivers, perennial and intermittent streams, lakes, ponds, reservoirs, drainage ways, retention ponds or basins, channels, ditches, culverts, swales, storm sewers, inlets, catch basins, pipes, head walls or other natural or man-made structures and/or discharges within the jurisdiction that generate, control and/or convey stormwater and through which the <<City/ Town>> intentionally diverts stormwater runoff from its public streets and properties. For the purposes of operating, maintaining and improving the stormwater management system, the <<City/ Town>> owns or has legal access to portions of the system that:

- 1) Are located within public streets, easements, and rights-of-way of the jurisdiction;
- 2) Are subject to access provisions established by <<City/ Town>> for the purpose of operating, maintaining, and/or improving stormwater systems and facilities; and
- 3) Are located on publicly held lands of other jurisdictions, and to which the <<City/ Town>> has adequate access for the purposes of operating the stormwater system.

Stormwater systems located on private property or on public property for which no access provisions have been made shall be considered the legal responsibility of the property owner.

The utility may provide some or all of the following services in exchange for collecting a utility fee:

- Administer the stormwater management program for the <<City/ Town>> of _____ ;
- Perform necessary studies and analysis of the service area or potential service area(s);
- Acquire, construct, operate, maintain, manage, protect, and enhance the stormwater infrastructure, including betterments and connections to the public drainage system; mapping of natural and man-made features affecting stormwater management;
- Detect and eliminate illicit discharges to the stormwater management system;
- Develop stormwater management criteria;
- Periodically inspect properties to determine contribution to municipal stormwater load;
- Inventory stormwater management facilities;
- Maintain an up-to-date database of residential and non-residential properties in the service area, billing class codes for each parcel, runoff contributions of each property to the stormwater system, and charges and payments for each account;
- Regulate, in accordance with local, state and federal regulations, the stormwater discharges from each parcel contributing to the stormwater system;
- Perform inspections of stormwater management structures and facilities, both during and after development/construction;
- Perform master planning for watershed management and capital improvements;
- Perform hydrologic modeling of a watershed and its subwatersheds;
- Provide engineering services for stormwater management;
- Develop and maintain best management practices (BMPs) for stormwater;
- restore natural features (wetlands and streams, for example);
- Develop flood control/abatement projects;
- Coordinate a needs assessments for an entire watershed or its subwatersheds;
- Enter into operating agreement with other agencies;
- Monitor water quality in surface waters;

NPDES Phase II Considerations

Twenty-eight communities in Maine are subject to EPA's Phase II NPDES requirements (See Appendix 2) because they operate municipal separate storm sewer systems (called MS4s) and meet the definition of an urbanized area as defined in the 2000 census.

Cities and towns in Maine that are subject to the NPDES Phase II program may find it advantageous to establish a stormwater utility that becomes the permittee under the NPDES program, and is the responsible entity for meeting the requirements of the EPA mandated permit program. Under this approach, several purposes can be served at one time: NPDES Phase II requirements are addressed; Phase II programs can be dovetailed with municipal stormwater management needs; and federal funding sources can be tapped to assist with implementation of municipal stormwater management programs.



- Revise/update local comprehensive plans with respect to stormwater management;
- Obtain federal and state permits necessary to conduct its duties;
- Obtain and administer grants and loans from public and private sources as authorized by the <<City/ Town>>;
- Collect service fees;
- Review development plans and provide comment to the <<local permitting authority>>, where that authority is delegated to the utility by the <<Planning Board/Zoning Board of Appeals/other regulatory entity>> of the <<City/ Town>> of _____;

The drafter of this utility should recognize that the utility has the capacity for approval or denial of permits, if such approval has been delegated by the appropriate authority; if not, delete this item from services provided.

- Acquire land in critical areas to serve as vegetated buffers, stormwater retention or infiltrating areas, or other stormwater management purposes;
- Acquire easements, rights-of-way, rights-of-entry and use, and means to gain access to properties to perform its duties;

Again, the utility must have authorization from the appropriate authority to acquire land and easements, otherwise delete this item from services provided.

- Provide periodic training for municipal officials and employees, volunteers, and other groups, as appropriate;
- Educate and inform the public about the impacts of stormwater runoff and the components of a stormwater management plan; and
- Perform any and all other functions necessary to protect public health, safety and welfare, protect public and private properties and habitat, and enhance the natural environmental and surface waters and groundwater quality within the <<City/ Town>> of _____.

In addition, the utility will be responsible for addressing all applicable state and federal stormwater permits, including National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer systems (MS4) permits and other Phase I and Phase II industrial stormwater permits for applicable municipal activities, and carrying out applicable actions under all local stormwater ordinances. As determined by the <<City/ Town>> <<appropriate official>>, the stormwater utility may serve as the permittee for municipal Phase I or Phase II permits and/or assume obligations under the permit.

For Phase II communities in Maine, the following language can be inserted at this point: Whereas the <<City/ Town>> of _____ is <<fully/partially regulated under Phase II of the NPDES permit program, the utility will assume responsibility for meeting federal NPDES permit requirements for MS4s, including compliance with the six federally mandated minimum control measures:

- 1. Public Education and Outreach*
- 2. Public Participation/ Involvement*
- 3. Illicit Discharge Detection and Elimination*
- 4. Construction Site Runoff Control*
- 5. Post-Construction Runoff Control*
- 6. Pollution Prevention/ Good Housekeeping>>*

Service Area Alternatives

Three alternatives for prescribing the service area can be considered. Ideally, a utility service area would be watershed-based, in order to maximize the effectiveness of stormwater management activities.

In the first alternative, the service area covers the same geographical area as an existing jurisdiction, such as a water or sewer utility, or a watershed protection district. The boundaries are the same for both (or all) districts.

In the second alternative, the service area is limited to the geographic areas of the town or region that discharge directly or indirectly to existing or future anticipated stormwater management and drainage systems maintained by the utility. This means the service area only includes property that is served by publicly owned and maintained stormwater management infrastructure.

In the third alternative, all property owners within the town or city where the utility operates are considered to be in the service area. This last definition of service area is the one recommended since water resources in the public domain are being protected. Management of stormwater will benefit all property owners whether or not they make use of man-made stormwater infrastructure. Under the third alternative, a broad application of the service area definition is supported by activities of the utility that are not necessarily related to construction and maintenance of infrastructure, such as watershed planning and public education. One disadvantage of this structure in Maine is that agricultural and forest property owners may be pulled into the fee structure, unless specifically exempted. Careful consideration is warranted on how agricultural and forestry operations are handled in the calculation of fees.

Cost of Operation

A review of existing utilities revealed that the cost of providing the services of a stormwater utility can range from \$20 to \$56 per capita per year; a cost of \$78,000 per square mile of service area was estimated for utilities in large but densely populated areas. A survey by the Florida Stormwater Association looked at monthly charge per billing unit (or ERU) and found the range per unit to be from \$0.26 to \$2.97, equating to an annual cost range of \$3.12 to \$32.40 per ERU. Nationally, 50% of average residential charges for utilities are at or below \$36 per year. The rate in Maine may be below the national median, but communities will have to calculate the cost of services and the potential revenue established by non-residential properties to establish a locally appropriate ERU.

On average, approximately 80% of utility revenues come from non-residential users, 20% from large residential customers, with small parcels (particularly single family residences) providing less than 1% of the revenue stream. It is important to note that many of these statistics are from parts of the country that are significantly more populated than Maine, and therefore may not correlate well with actual costs of operating a utility in the state (See references at end of narrative for examples of utilities in both rural and more urbanized localities). In some Maine communities, where single lots may make up the vast majority of the potential revenue, the calculation for revenue derived from single-family residential lots may need to be higher to offset a lack of commercial areas.

9. Service Area

At a minimum, the service area will include all areas that discharge directly or indirectly to the stormwater management system(s) maintained by the utility, as included on a map entitled, _____.

Such maps might be generated from existing municipal digitized data and be entitled, “GIS Coverage of Stormwater Utility Service Area,” or “Service Area by <<City/ Town Assessors Maps>>.”

This area may change over time as the stormwater system is improved, expanded or maintained. The service area may include any additional portions of the community or region serviced by the utility if the <<Board of Managers>> of the utility determines that those areas are receiving benefits from the activities and services of the utility.

Designated growth areas in the <<City/ Town>> are assumed to be priority locations for construction and maintenance of stormwater management facilities in order to facilitate development while minimizing impacts on environmental resources. Service areas must be consistent with the approved/ adopted comprehensive plan(s) for the location of interest.

Consistency with an approved/adopted comprehensive plan is only necessary if the service area does not cover the entire municipality.

10. Stormwater Utility Service Fees

The <<City/ Town>> may determine and modify from time to time the service fees of the stormwater utility in order that the funds generated are commensurate with the cost of stormwater management services in <<City/ Town>>. In general, funding for the stormwater utility shall be equitably derived based on methods that establish a clear link between the fees and degree of impact imposed on the stormwater management system and programs. Service charges for stormwater management shall be fair and reasonable and shall bear a substantial relationship to the long-term demands and related cost of providing services. Similar properties shall be charged similar rates.

To the extent that other funding methods are employed by <<City/ Town>> to manage stormwater both within and outside the service area, stormwater service fees shall support and be consistent with plan review and inspection fees, special fees for services, fees in lieu of regulatory requirements, impacts fees, special assessments, and other fees. Fees collected to fund stormwater management activities of the utility can also be supplemented by other revenues available to <<City/ Town>>, most notably state, federal, and private grants or loans.

Options:

- Rate Structure to be determined at a future date. Upon adoption of this ordinance, the staff of the utility, together with consulting engineers, shall undertake an analysis of the cost of services for the purpose of setting an appropriate annual rate schedule for properties served by the utility. The results of this study shall be submitted and approved by the governing body of the <<City/ Town>> prior to delivery of any bills to customers in the service area.

Rate Structures and Comparison of Alternatives

First and foremost, it is critical that rates assessed to support a stormwater utility be structured as a service fee and not a tax. The defining characteristic of a stormwater utility service fee is that the entire amount is used to fund the express purposes for which the utility was created. In contrast, taxes are revenues collected by an authorized division of government that can be disbursed for a wide variety of purposes.

In Maine, service fees can be charged by utilities. Of the stormwater utilities in existence today, 70 to 80% are funded only through stormwater utility fees. The remainder are mostly funded through multiple sources of revenue, with very few being funded by a dedicated tax.

A variety of approaches to stormwater utility rate fees have been employed throughout the country. While no single formula has been identified as the best option across the board in terms of fairness and ease of implementation, it is generally accepted that flat fees are the most likely kind of revenue stream to raise concerns amongst rate payers and that pro-rated (or adjusted) fees are more acceptable to rate payers and most defensible in the event of a legal challenge. However, pro-rated fees require collection and interpretation of parcel data, which is labor-intensive and adds to the cost of providing services.

The percent of the utility's revenue stream from each type of land use should approximately equal the percent of services required to manage stormwater from that land use. The closer the correlation between service charge and service cost on a parcel-by-parcel basis, the more legally defensible the rate structure. Some utilities divide their rates into parts, such as an impervious surface component, a street-related component, and administrative component, so that customers can see how their money is being spent.

While both fee-based and tax-based revenues are described here, it is recommended that utilities be funded on a fee-based system, which has broader public appeal than a tax-based system. The fee-based approaches described below include a range of options that can be considered; however, the one that has the best combination of simple and fair elements is Option 2 below, in which fees are based on parcel size and impervious cover.

A. Fee based revenues

The most popular method of billing for a stormwater utility is calculation of a fee based on impervious area alone. Other approaches include fee systems based on a combination of gross parcel area and impervious area, gross parcel area and a development factor, and various forms of flat fees.

Options for rate structures include the following:

1) Flat Fees based on land use type and size

Description: Residential and non-residential properties are categorized by size of parcel or size of impervious area, and a flat rate (monthly or annually) is applied. This rate can be supplemented by a fixed administrative or other type of fee to clarify how revenues are spent.

- Rate structures to be included with adoption of ordinance and subject to modification as necessary. (See below.)

Rate structure:

The following stormwater service fee rates shall apply:

- All residential dwelling units shall be categorized as one equivalent residential unit (ERU), as defined in Section 5 of this document. Rates shall be calculated based on the following formula:

$$\text{Annual Fee} = (1 \text{ ERU} \times \text{DIF} \times \text{Rate}) + \text{Fixed Fee}$$

Following is an example for a residential dwelling unit, taken from Beaufort, SC:

$$\begin{aligned} \text{Annual Fee} &= [(1) \times (31) \times (\$1.20/\text{year})] + \$2.83 \\ &= (\$37.20) + \$2.83 \\ &= \$40.03/\text{year} \end{aligned}$$

where:

- ERU is the established Equivalent Residential Unit; Box: The ERU usually has a value of 1 for residential properties, but can be varied according to subcategories of residential density, as determined by the implementing agency);
- DIF is the development intensity factor applicable to the subject property (see Table <<municipality to insert intensity factor similar to Table 1>>);

In the example, a development intensity factor of 31 is applied to residential properties, based on the assumption that the average amount of impervious surface of a residential parcel is between 20 and 41.9 percent, with 31 being the mid-point of these two numbers - see Table 1 for other DIF values.

- Rate is set by the utility; and
- Fixed Fee is set by the utility. BOX: The fixed fee is usually based on fixed administrative costs.

- Other developed land not classified as residential dwelling units (except for agricultural land and forestry activities) shall be billed at a rate based on size and intensity, <<and supplemented with an additional fee for land uses with higher potential pollutant loads. (A list of land uses that could be included in this category appears in Appendix 1.)>>. Rates shall be calculated based on the following formula:

$$\text{Annual Fee} = (\text{ERGA} \times \text{DIF} \times \text{Rate}) + \text{Fixed Fee}$$

ERGA unit value

where:

- ERGA unit value (equivalent gross residential area - see definitions) is established by the utility;
- DIF is the development intensity factor applicable to the subject property;
- Rate is set by the utility; and
- Fixed Fee is set by the utility.

- 2) Service fees based on parcel size and impervious cover and measured as “Equivalent Residential Units” or ERUs.

Description: The impervious cover is estimated based on the land use, and is applied to both residential and non-residential land uses. The so-called ERU is identified, usually as the average size of a residential parcel. An average value for impervious cover is used and a specific square footage is assigned based on both the imperviousness of the house and the driveway, sidewalk, etc. This value is the baseline from which all service fees are calculated. A rate is set for one Equivalent Residential Unit, based on the amount of revenue that must be raised to cover the cost of services (ERU values in the communities surveyed ranged from 2,000 to 15,000 square feet).

Under the ERU method, residential properties can either all be assigned a fee based on a single category for all residential land uses, or more categories of residential parcels can be established, based on size and development intensity, with a set fee for each category. A third option is for the utility to evaluate all residential properties for their comparative size and impervious cover (development intensity) relative to the baseline, and calculate a proportionate service fee that may be different for every property.

In the first case above, the service fee is calculated by multiplying the baseline value of 1 ERU per single-family detached dwelling (SFD) by a standard development intensity factor for SFDs, and multiplying the resulting value by the rate. In this approach, all SFDs pay the same annual service fee. The second possibility allows residential parcels to be subdivided into different dwelling unit categories (low density, medium density or high density), under which fee calculations more accurately reflect the cost of services. The third case is the most accurate in terms of equating service fees with service demands, but is highly labor-intensive. GIS land use mapping and/or digital orthophotography can be used to determine development intensity.

It should be noted that spending substantial time calculating the cost of various types of residential parcels is not cost-effective since the large majority of service fees come from non-residential development. However, it is important and often politically necessary to ensure that a rational nexus exists between fees and services provided, for all parcels. Most utilities have found that the option of three residential categories strikes a balance between fairness and data collection burden. This has been sustained in legal challenges.

Within the ERU method, the service fee for non-residential parcels can be calculated in several different ways. In one successful model (Beaufort, SC - see Table 1), the area of non-residential parcels is divided by the area of the established ERU to calculate the number of ERUs for the property. This number is increased by a development intensity factor assigned to the property that represents the hydrologic response of the property, and may be a composite number that considers different development intensities on different parts of the parcel. (Formulas and calculations used to determine development intensity factors must be based on standard engineering practices and structured such that fair and reasonable fees result from their application). The resulting number is multiplied by the rate, and a fixed administrative cost is added to reach a final total annual service fee. Jurisdictions may also want to consider a third factor in calculating service fees for non-residential parcels, beyond parcel size and development intensity, that relates to the quality of runoff. Utilities can add an appropriate multiplier to the formula that incorporates the cost of service for treating

The following example shows how an ERGA would be calculated for a 5-acre shopping center that is 75% impervious:

Assume the ERGA is calculated to be 15,000 square feet (sq. ft.) The commercial property has a total impervious cover of 3.75 acres or 163,250 sq. ft, which is equivalent to 11 ERGA. $(163,250/15,000 = 10.89, \text{ use } 11)$. So the small shopping center is basically equivalent to 11 residential units.

The final calculation of rate is as follows:
$$\begin{aligned}\text{Annual Fee} &= [(163,250) \times (75) \times (\$1.20/\text{year})]/15,000 + \$2.83 \\ &= (\$979.50) + \$2.83 \\ &= \$983.33/\text{year}\end{aligned}$$

The development intensity factor (DIF) of 75 was selected based on the rate structure (Table 1).

- c) Vacant parcels will be charged \$ ____ per acre, with a minimum charge of one acre.
- d) No single-family parcel for lots larger than _____ square feet shall be billed more than a maximum service charge of \$ ____ in one calendar year, nor less than \$ ____ in one calendar year for single family parcels under ____ square feet, unless an exemption from the service fee has been approved by the appropriate authority.

This provision ensures owners of large parcels that their annual fee will not exceed a maximum dollar amount per year.

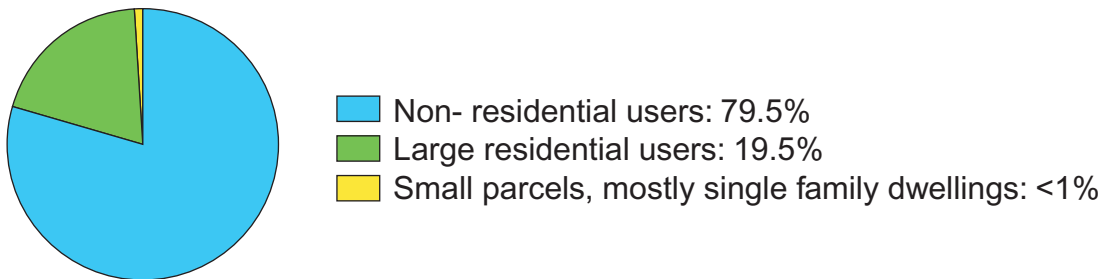
Rate studies shall be conducted periodically to determine the equitability of the charges. There shall be an appeal process under which a person who considered his/her stormwater charge to be unjust or inequitable can request a review and decision.



stormwater runoff from a land use with a high potential for pollution (A list of potential land uses for this category is found in Appendix 1).

The range of rates found in a survey of jurisdictions using the ERU approach, in which both rate and ERU values were available, was \$1.20 per ERU per month to \$5.50 per ERU per month.

The following chart illustrates typical sources of revenues for a utility. It can be modified for each community, using real numbers, and is a useful way of illustrating distribution of the burden for stormwater management activities.



Source: Florida Stormwater Association Utility Survey.

3) Service fees based on Equivalent Hydraulic Acres (EHA).

Description: In this approach, the pervious and the impervious area of a parcel are each multiplied by a runoff factor and added together. The result is multiplied by the utility rate and this total is then multiplied by a water quality factor to calculate the service fee for the parcel. The volumetric runoff coefficient or the Rational Formula “c” value would work best as the value for the runoff factor. The following example illustrates this method using the Rational Formula runoff coefficient c value.

Assume a small 2-acre convenience store site that has 1 acre of impervious cover and 1 acre of turf.

First, calculate a weighted runoff coefficient for the site: use a c value for impervious cover of 0.9, and a c value for turf of 0.35.

The weighted c value = $[(1 \text{ acre} \times 0.9) + 1 \text{ acre} \times 0.35)] / 2 \text{ acres} = 0.625$

Then multiply the resulting weighted c by the common rate factor used (the common rate factor is established by the utility based on required revenue projections); assume \$25 per acre for this example: $0.625 \times 2 \text{ acres} \times \$25/\text{acre} = \$31.25/\text{year}$.

Since all sites do not generate the same level of pollutant load, a utility may elect to apply a different water quality factor for certain sites. Appendix 1 lists the sites that typically generate the highest pollutant loads. Assume the water quality factor for all sites (except those in Appendix 1) is 1.0, and the water quality factor for all sites listed in Appendix 1 is 1.5. Therefore, since the site is listed in Appendix 1 (a convenience store with more than a 1,000 trips per day), apply a water quality factor of 1.5.

The final service fee will equal: $\$31.25 \times 1.5 = \46.88



4) Fee based on calculated runoff volume from a prescribed storm event

Description: Using generally accepted engineering practices, a runoff volume is calculated for each parcel in the service area for storms of varying frequency, such as the 2-year, 10-year, or 25-year storm. The service rate is based on the average annual runoff volume times a fee per unit volume, plus a fixed administrative fee.

There are two other potential sources of money to fund stormwater utilities, both based on tax revenues. These are discussed here only briefly since, in the current political climate, they are unlikely to be given positive consideration by elected officials, government agencies, and citizens in general.

B. Tax based revenues

Revenue streams requiring voter approval could include an alternative such as property tax assessments. While some communities in the country have utilities funded by property tax revenue streams, this approach is not recommended for Maine since it is less equitable than a fee structure based on demand for service.

Revenue streams requiring state legislative action include establishment of new taxes like a real estate transfer tax, and dedicated revenue streams from sources like a hotel tax or a special license plate fee. Again, this approach is not recommended as it is likely to be unpopular amongst legislators and citizens.

Table 2 compares the characteristics of recommended options, namely, those that are fee-based.

Credits and Exemptions

The stormwater utility may create a system of credits for private property owners who install and maintain best management practices to reduce stormwater runoff from their property. Credits are partial rebates applied to the total stormwater service bill for a property. Some examples of when credits can be applied are in the case of placement of a permanent conservation easement on a property or construction of a stormwater detention basin on a property to serve one or more users. The utility can also consider an education credit for schools and other institutions that offer a specific educational program developed by the utility to inform and engage its customers.

Credits are an important component of a utility since they improve the equity of the application of fees and act as an incentive for private on-site stormwater management improvements. However, a credit system must be simple and, at the same time, must support the revenue stream of the utility. The language in the model ordinance is recommended as a means to balance the need for credits with the need for efficient administration.

In terms of exemptions, meaning that the entire fee is waived, the utility needs to decide whether undeveloped properties in the service area are liable for paying service fees, how properties owned by entities other than private landowners or the <<city/town/district>> are charged, and whether the <<city/town/district>> itself is a customer of the stormwater management service. Certain categories of land use are commonly excluded from utility fee charges, such as government property of any

11. Credits and Exemptions

Credits against service charges, and fines or penalties as determined by the <<City/ Town administrator>>, are an appropriate means of adjusting payments to the utility. Credits against service charges shall be granted on a sliding scale for properties providing on-site or off-site stormwater management measures that reduces the impact of the property on the cost of providing stormwater management services, provided that such systems are adequately maintained and meet performance standards specified under Chapter 500 Stormwater Management Law <<and the Stormwater Management Ordinance of the <<City/ Town>> of _____, where applicable>>. A fee credit manual for the stormwater utility shall be developed by the <<Authorized technical representative of the Utility>> specifying the necessary performance standards for stormwater systems to qualify for a credit. The scale for credits shall reflect the extent to which the subject properties reduce the peak rate of runoff from the property, or avoid other costs incurred by the stormwater management utility in the delivery of services, and shall be determined by the <<Utility Bureau Chief or other upper level administrator>>. The maximum credit is 40% of the normal fee for the property, but not less than the minimum charge.

Credits shall be provided for the following:

- a) Properties upon which a permanent and/or perpetual conservation or other protective easement has been provided shall receive service fee credits, as established by the <<Board of Commissioners of the utility, or other body named by the City/ Town elective body>>, provided such easement:
 - 1) Reduces or compensates for the impact that the subject property, or an unrelated property, has on public or private stormwater systems or water quality of receiving waters;
 - 2) Improves the function of public stormwater systems or the water quality of receiving waters; or
 - 3) Provides other substantial benefits as identified by the <<Board of Commissioners of the utility, or other body named by the City/ Town elective body>>.
- b) Creation of freshwater and/or tidal wetlands (assuming the created wetland is not part of a mitigation project associated with a permitted impact to a natural wetland);
- c) Stormwater management practices (e.g., on-site detention and retention facilities);
- d) Peak flow reduction (may be same as c); and
- e) <<Other>>.

Exemptions from stormwater service fees are not allowed, except as provided in this section. Exemptions shall be allowed for:

The drafter of the ordinance may select any or all land uses from the list provided.

- <<All government property;
- airports;
- railroad rights-of-way;
- public parks;
- churches;
- colleges;

type, public parks, railroad rights-of-way, streets and highways and undeveloped land. However, the relative contribution of each land use should be considered before it is exempted. For example, streets and highways add a considerable volume of stormwater runoff and exclusion of this use may be deemed as unfair to other private property owners.

It is important to recognize that exemption programs often lead to an increased administrative burden and lost revenue, so only a few should be considered, and the parameters of those should be clearly described. A range of exemptions is provided in the model.

Collection of Revenues

Nationwide, the great majority of stormwater utilities collect their user fees through a combined utility billing system. About 20% of utilities attach the stormwater service bill to the municipal tax bill, and a very small percent send out the utility bill separately.

Additional Sources of Funding

In addition to service fees, the stormwater utility may raise funds from a number of other sources, including municipal bonds, state and federal grant programs, other municipal funds, fees for permit reviews for new development and district taxes and fees (where authorized by state legislation). Typically, bond funds are used to offset the costs of capital investments, and the service fees are used to guarantee payback of the loans. Federal Clean Water Act programs like Section 319 Non-point source management funds, Section 604 (b) and Section 104(b)(3) grants, can help offset certain costs of services provided by the utility. State Clean Water Act or other revolving loan funds can be accessed to pay for specific projects, and paid back at low interest rates over time. Coastal areas in the state of Maine may be eligible for Hazardous Mitigation Grants from the Maine Emergency Management Agency.

Enforcement of Payment

Nationwide, there are two preferred methods of enforcing payment of utility bills. The most common is a property tax lien for non-payment after notification and a specified time period, and the next most common is utility shut-off, such as shutting off water service. A few utilities issue tax certificates or send bills in arrears to a collection agency.

Liability Protection Considerations

While a stormwater utility is created to serve the public interest, it is important that establishment and operation of a utility not create any express or implied obligations to any person or property within or outside the jurisdiction of the stormwater utility. Language is provided in the model to protect the utility and/or its parent organization from liability in the case of flood damage, assessing and removing/repairing pollution sources, and issuance of a permit or plan approval. The section clarifies that operation of stormwater systems on private property are the legal responsibility of the property owner.

- *schools; and*
- *undeveloped land.>>*

12. Fee Collection Schedule

1) Property Owner fees

Stormwater utility fees shall be set in association with collection of <<*water/sewer/other fees*>>. The fees shall be collected <<*monthly/quarterly/annually*>>. A person shall have 30 days to make payment on a monthly stormwater utility bill, and 60 days to make payment on an annual bill.

2) Tenant Fees

Assessment of tenants: In the case where a tenant of a non-residential property modifies that property to accommodate its operation, and in so doing increases the demand for services on the stormwater management system either in terms of runoff quality or quantity, the utility may increase the fee above the base fee paid by the property owner to an amount commensurate with the increase in demand for service.

13. Right to Enforcement and Violations

Any person who violates any of the provisions of this chapter shall be subject to punitive action as provided in <<*cite relevant municipal law(s)*>>. Each and every day on which such person continues to violate the provisions of this ordinance after having been notified of such violation shall constitute a separate offense. Any person who violates any provision of this ordinance shall be subject to a civil penalty of up to \$ _____ <<*community to insert fee based on local preference*>> per day for each day that such person is in violation of this ordinance.

Delinquent Fees

The fee, when overdue, including interest and penalties, is a lien on real property and may be collected in the same manner as delinquent real property taxes or by a suit against the property owner.

If the fee is collected by a government entity.

When a fee is overdue, the Utility will prepare a report to the municipality with pertinent details of the overdue fee, and the municipality will then take appropriate action.

14. Limitation of Liability

Floods from stormwater may occasionally occur which exceed the capacity of the storm drainage facilities constructed, operated, or maintained by funds made available under this chapter. This chapter shall not be interpreted to mean that property subject to the fees and charges established herein will always (or at any time) be free from stormwater flooding or flood damage, or that stormwater systems capable of handling all storm events can be cost-effectively constructed, operated or maintained. Therefore the following limitations on liability are set forth:

Legal Considerations Relating to Rate Structures

It is important to realize that stormwater utilities have frequently been the subject of legal challenges over the past twenty years. Much has been learned from the decisions in these cases, and towns that are now implementing a utility for the first time are in a much stronger position to create an entity that enjoys public support and is less vulnerable to legal challenges. Key facets of legally firm stormwater utilities include the following components:

- The local ordinance establishing the utility identifies a “rational nexus” or sensible connection between the stormwater utility fees and the services received for payment of those fees (i.e., the services are directly related to impacts of stormwater runoff);
- The cost is clearly structured as a service fee, meaning that funds are held in a dedicated account for the specific purposes identified in the ordinance creating the utility, and funds are expended ONLY for these purposes;
- The fees are based on fair and equitable formulas;
- A dedicated fund is associated with the utility, and funds are expended only for the specific purposes for which the utility has been created;
- Fees collected are returned to customers of the utility if the services are not provided within a reasonable time frame.

The Importance of Continued Public Education and Participation

Public support is the single most important factor in the establishment and long-term success of a stormwater utility. Not only is political will needed to create a utility, it is also vital to maintaining sufficient funding for the utility to meet its obligations, and lessening the likelihood of legal challenges to the collection of fees. Involvement of the public in programs of the utility, such as water quality monitoring to determine stormwater management needs or the effectiveness of existing efforts, can build public awareness and ownership of stormwater management efforts. This consciousness can translate into broad public support for the utility and its activities. Efforts to inform and involve the public with regard to operation of the utility should be ongoing, and specifically incorporated in the operating program of the utility.

Final considerations

- Expect 14 to 24 months to establish a utility.
- Get advice from successful utilities.
- Piggyback stormwater utility bills onto other service water or sewer bills, if they exist. Avoid including stormwater utility in property tax bills, as this approach carries a greater risk of the service fees being viewed by customers as a tax.
- Organize a state association of stormwater utilities, once utilities begin to be established in Maine, in order to lobby for funds or powers at the state or federal level, and to coordinate utility efforts statewide.

- a) It is the express intent of this <<official name of utility ordinance>> to protect the public health, safety and welfare of properties and persons in general. However, this ordinance does not create any special duty or relationship with any individual person or specific property either within or outside the jurisdiction of the stormwater utility.
- b) The <<City/ Town>> _____ shall not be held liable for flood damage or assessing and removing pollution sources, and reserves the right to assert all available immunities and defenses in any action seeking monetary compensation from the <<City/ Town>>, or its officers, agents or employees for alleged damages arising from alleged failure or breach of duties or relationship as may now exist or hereafter be created.
- c) The issuance of any permit, plan approval or inspection shall not constitute a warranty, express or implied, nor shall it afford the basis for any action seeking the imposition of monetary damages against the <<City/ Town>> or its officers, employees or agents.
- d) Operation of stormwater systems located on private property or public property not owned by the <<City/ Town>> of _____ and for which there has been no public dedication of such systems and facilities for operation, maintenance and/or improvements of the system, shall be the legal responsibility of the property owner, except as may be affected by the laws of the State of Maine and the United States of America.

15. Severability

Each section of this ordinance is severable from all other sections. If any part of this ordinance is deemed invalid by a court or competent jurisdiction, remaining portions of the ordinance shall not be affected and shall continue in full force. Whenever this ordinance conflicts with any other ordinance of the <<City/ Town>>, State of Maine, or federal government, the stricter standard shall apply, except as limited by state or federal law.

16. Effective Date

This ordinance shall become effective on _____.



References:

GENERAL

Florida Stormwater Association
<http://www.florida-stormwater.org/default.htm>

Kurt Spitzer-Executive Director
FSA
P.O. Box 867
Tallahassee, FL 32302
850/561-0904, Fax 850/222-4124
kspitzer@florida-stormwater.org

U.S. EPA. 1995. National Water Quality Inventory. 1994 Report to Congress, EPA 841-R-95-005, Washington, DC 210 pp.

Web links:

Pioneer Valley Planning Commission
http://www.pvpc.org/docs/landuse/pubs/storm_util.pdf

Journal of Surface Water Quality Professionals
http://www.forester.net/sw_0011_utility.html

Natural Resources Defense Council
<http://www.nrdc.org/water/pollution/storm/chap4.asp>

Urban Policy Center at Indiana University
<http://stormwaterfinance.urbancenter.iupui.edu/SUsurveys.htm>

MUNICIPAL EXAMPLES:

Beaufort, South Carolina:
http://www.co.beaufort.sc.us/Pub_Works/Stormwater_Utility1.htm

Durham, North Carolina
<http://livepublish.municode.com/15/lpext.dll?f=templates&fn=main-j.htm&vid=10670>

Greensboro, North Carolina
<http://www.ci.greensboro.nc.us/stormwater/Planning/technicaldocuments.htm>

Orlando, Florida:
http://www.cityoforlando.net/public_works/stormwater/Index.htm

Griffin, Georgia
http://www.griffinstorm.com/stormwater_utility.htm

COUNTY EXAMPLES

Sacramento County, California
<http://www.saccodwr.org/swu.htm>

Brevard County, Florida
<http://www.brevstorm.org/>

APPENDIX 1

Land Uses with Higher Potential Pollutant Loads

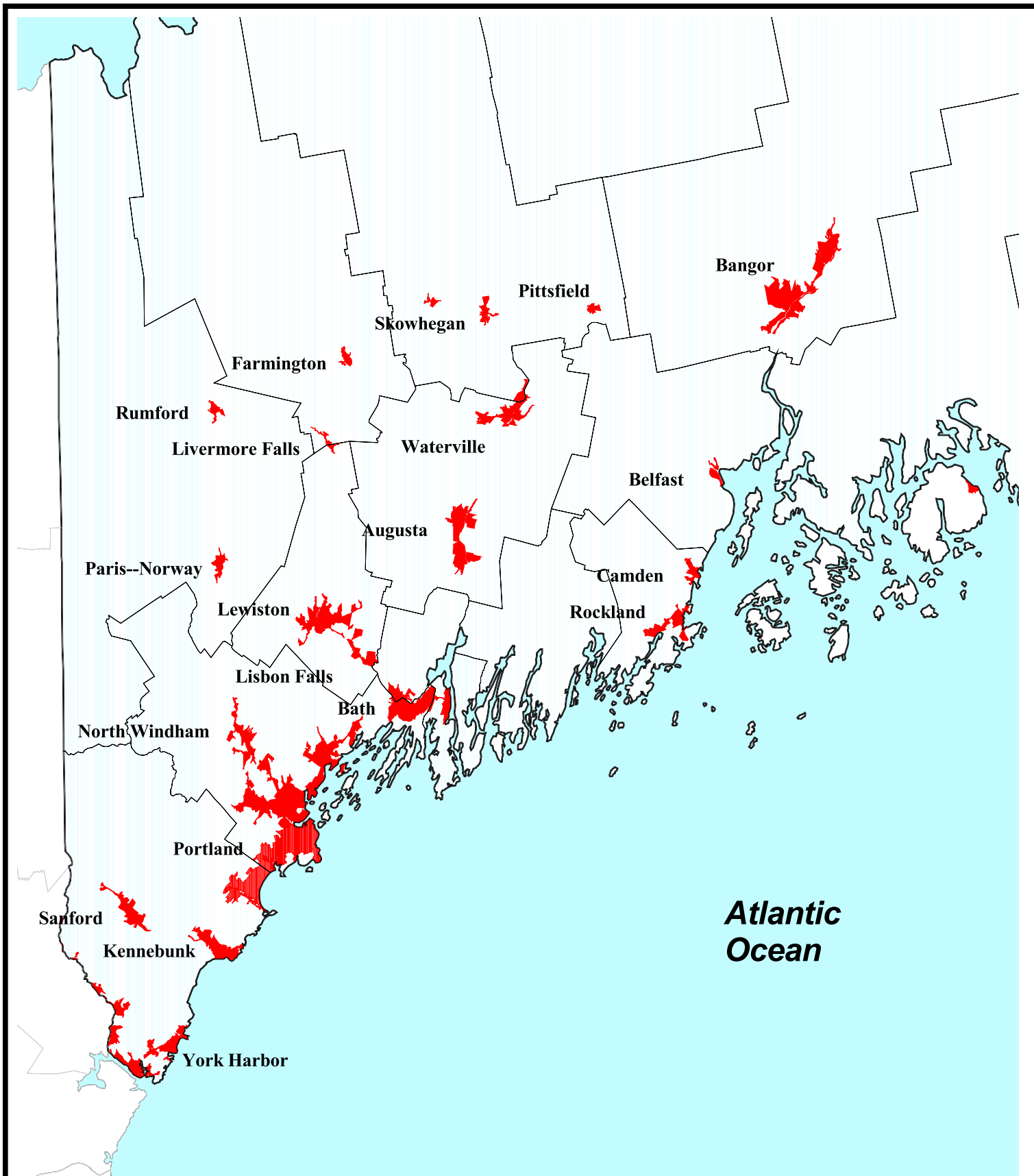
- Stormwater discharges associated with Standard Industrial Codes
- Airports
- Auto Salvage Yards
- Auto Fueling Facilities
- Fleet Storage areas (cars, buses, trucks, public works)
- Vehicle service and maintenance areas
- Vehicle equipment and cleaning facilities
- Commercial parking lots with average trip generation rates of 1,000 or greater per day, such as fast food restaurants, convenience stores, high-turnover (chain) restaurants, shopping centers, and supermarkets
- Road salt storage and loading areas (if exposed to rainfall)
- Commercial nurseries
- Flat metal (galvanized metal or copper) rooftops of industrial facilities
- Outdoor storage and loading/unloading areas of hazardous substances
- SARA 312 generators (if materials or containers are exposed to rainfall)
- Marinas

APPENDIX 2



Maine Phase II Community map (attached)

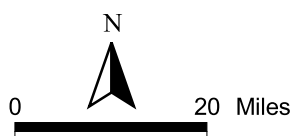
Table 1 - Beaufort, SC rate structure example (attached)

Table 2 - Comparison of Fee Structures (attached)



Legend

-  2000 Census Urbanized Areas
-  County Boundaries



Horsley Witten Group, Inc.
Phone: 508-833-6600
www.horsleywitten.com



Coastal Maine
Urbanized Areas

6/27/05 ec
J:\Maine.apr

Appendix 2

APPENDIX 2

Table 1 - Beaufort, SC rate structure example

Rate structure for Non-residential properties

INTENSITY OF DEVELOPMENT	INTENSITY FACTOR	PROPERTY CLASS	ANNUAL RATE	FIXED FEE	TOTAL ANNUAL BILL
85% to 100%	93	F	\$1.20	\$2.83	\$114.43
65% to 84.9 %	75	E	\$1.20	\$2.83	\$ 92.83
42% to 64.9%	54	D	\$1.20	\$2.83	\$ 67.63
20% to 41.9%	31	C	\$1.20	\$2.83	\$ 40.03
2% to 19.9%	11	B	\$1.20	\$2.83	\$ 16.03
0% to 1.9%	1	A	\$1.20	\$2.83	\$ 4.03

Declining block rate for large properties

EQUIVALENT GROSS AREA UNITS*	DEVELOPMENT INTENSITY FACTOR	ANNUAL RATE	FIXED FEE	TOTAL ANNUAL BILL **
Up to 50 units	No Adjustment	\$1.20	\$2.83	Up to \$ 62.83
50 to 499 units	0.1 x INTENSITY FACTOR	\$1.20	\$2.83	Up to \$62.71
500 to 5000 units	0.01 x INTENSITY FACTOR	\$1.20	\$2.83	Up to \$62.83
Above 5000 units	0.001 x INTENSITY FACTOR	\$1.20	\$2.83	Up to \$8.83

* One Equivalent Residential Gross Area Unit is equal to 15,000 square feet

** The total annual bill is a composite number based on the amount to land falling into each category of development intensity. For example, a commercial site of 500 ERGA units contains a mall, a parking lot, and 25 acres of open space. The developed portion of the mall site is a Class F Property and has an associated intensity of development factor of 93. The balance of the property is undeveloped and is a Class A property. The rate for the site is calculated as follows: add formula, with explanation

APPENDIX 2

Table 2 - Comparison of Fee Structures

Fee Structure Features	Flat Fee	Equivalent Residential Unit	Equivalent Hydraulic Acres	Runoff Volume
Considers parcel size	NO	YES	YES	YES
Considers impervious Area	NO	YES	YES	YES
Requires Parcel categories	YES	OPTIONAL	NO	OPTIONAL
Standardizes service Demands	NO	YES	YES	YES
Administrative requirements	LOW	MEDIUM - HIGH	MEDIUM - HIGH	MEDIUM - HIGH
Legally Defensible	LOW	HIGH	UNKNOWN	UNKNOWN